

class cynanche"—not "a malignant fever"—(it seems hardly credible that an accurate observer could have so applied the term)—but a disease of the nervous system, as tetanus is another of the same system. As in traumatic tetanus, we oftenest have, as a cause, a wound, producing irritation of the nervous system; here we have a wound, with a specific virus deposited, waiting for some exciting cause which shall put it in action to produce a specific effect upon that system.

The question is full of interest, from its bearing on the treatment of a disease which has hitherto almost uniformly baffled the resources of art. I was led to try the effect of large doses of opium and calomel in this case, partly from the commonly accepted notions of their influence, and on account of the very high authority for salivation as a remedy in tetanus, but chiefly from observing that, in one of some cases related by Mr. Hewitt (*Medico-Chirurg. Trans.*, vol. xiii.), recovery took place in what appears to be a genuine case, after salivation.

MEDFORD, MASS., Nov. 1849.

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ART. VIII.—*On the Identity of Erysipelas and a certain form of Puerperal Fever, and its Contagiousness.* By EZRA P. BENNETT, M. D., of Danbury, Conn.

ON this subject there appears to be, at the present time, great diversity of opinion. Some maintain—I think correctly—that the two diseases are identical in their character, and that both, under certain circumstances, are contagious; and that the morbid principle of either may, under favourable circumstances, produce the other. Others contend that they are totally and essentially distinct, and incapable of producing and reproducing each other, under any possible conditions.

In view of this divided state of the profession in regard to a disease of so much importance, I have thought it might be useful, or at least interesting, to send you for publication the history of eleven cases of puerperal disease, which occurred in my practice in the winter of 1847–8, extending into the summer months; giving, at the same time, my own opinion in regard to its true nature, its identity with erysipelas, its communicability from one patient to another, by the accoucheur, and by other modes of propagation. In doing this, I am well aware that I am arraying myself in opposition to some of the profession in this country, whose opinions, in consequence of age, experience, talents, and position, are entitled to the utmost respect and deference. But, after all, facts are facts, no matter by whom observed. Facts make up all that is useful in medical science. We know, for instance, that it is a fact

that cinchona will cure an ague and mercury syphilis, yet no theorizing could ever have arrived at these facts, and no theorizing can make them anything less than facts.

In the fall of 1847 and 1848, a disease of a new character made its appearance among us. It appeared to break out simultaneously in both parishes of the town, viz., Danbury proper and Bethel, which proved to be an epidemic erysipelas of a wide-spread and fatal character. Previous to this time, cases of ordinary erysipelas had become much more than usually prevalent, so much so that, from being a very rare, it had become a very common complaint. Many of the cases were severe, but none were fatal. In November, it assumed an epidemic character, of a malignant grade. This form of the disease has been well described by my nephew, Dr. H. N. Bennett, of Bethel, in the *New York Journal of Medicine*. A very accurate account of it has also been given by Dr. Charles Hall, of Burlington, Vt., and Dr. George Dexter, of Lancaster, N. H., in the *American Journal of the Medical Sciences* for January, 1844. The disease, as it occurred here, was, with a very few and slight exceptions, a fac simile of the complaint as it occurred in the above-mentioned places.

My object in this paper is to prove the connection and identity of this disease with a peculiar form of puerperal inflammation, which commenced in January, 1848, when the erysipelas was at its height, and which went hand in hand with it during its stay in this place. I think I shall be able to prove that the two diseases are not mere coincidences, but that they were identically and specifically the same; differing only in their location and the peculiarities of the child-bed state. In the first place, I became perfectly satisfied, during the prevalence of this epidemic, both by observation during the life of the patient, and by post-mortem examinations, that erysipelas is not exclusively a dermoid disease. The evidence was indubitable, that not only the skin, but the mucous membranes, cellular tissue (primarily, and not by extension), and the serous tissues of the pleura and peritoneum, were the seat of this disease.

The very first case of this affection to which I was called, was an erysipelatous inflammation of the pleura. It commenced (as I was informed by the friends) with sore throat, which was treated for a few days by a Thompsonian. When I saw the patient, she had a train of symptoms which were of an entirely different character from anything I had ever seen in a practice of over twenty years. She had no pain in the side, or catching in respiration, but her breathing was excessively hurried, as was, of course, the circulation; her face was cadaverous; look anxious; said she was in no pain, but was very tired; no râle; chest sounded clear; she died within twenty-four hours, and left me perplexed in regard to the true nature of her case. Two or three days after this, I was called to see a precisely similar case of disease, in a patient of my nephew, in Bethel. This case was a fac simile of the other in symptoms, and terminated fatally in about

three days; when a post-mortem examination revealed a case of erysipelatous pleuritis, of a most unmistakable character. The whole pleura costalis and pulmonalis of both sides was affected with a diffuse inflammation; on one side there was an effusion of a sero-purulent character, with some few albuminous flocculi, on the other there was scarcely any effusion, but some very slight adhesions. The parenchymatous texture of the lungs, together with their lining membrane, was free from disease.

Now this was not an ordinary case of pleuritis; there was not the pulse of pleuritis; there was no pain in the side—in fact, there was no pain anywhere; her only complaint was of being tired; the effusion was not sufficient to cause death, and that effusion was not of a sero-albuminous character, as is the case in pleuritis. Death was produced by excessive irritation of the nervous system.

Again, in many cases this disease commenced in, and was in a great measure confined to, the cellular tissue (the skin suffering but slightly and secondarily), producing diffuse cellular inflammation of a most virulent and extensive character; in one instance, affecting the whole trunk from the pelvis to the chin. This was the case of a young physician, of much promise, and terminated fatally, of course. In another case, that of a robust mechanic, the whole cellular tissue of the thigh was affected, which terminated in gangrene and death. In a small boy, the cellular tissue of the thigh also was affected, without the skin participating in the affection in the least. He was treated with poultices; translation to the brain took place, and he died of meningitis. In some cases, again, the disease attacked the stomach and bowels, producing gastritis or peritonitis; and, in many cases, it attacked the womb and its peritoneal covering, producing metritis and puerperal peritonitis. I am aware that this view of the disease is directly opposed to that of Dr. Meigs and others. Dr. Meigs says that it is as impossible for a woman to have erysipelatous inflammation of the peritoneum, as to have iritis in the pylorus; a very strange remark, by the way, and one the force of which I am totally unable to perceive.

So far as my experience goes, the same kinds of inflammation may occur in tissues wholly different, and that it is the effects of the inflammation, which are so much modified by difference of structure. Now inflammation may take place in the iris or in the pylorus, and that inflammation may be of the ordinary or diffuse character; and this is all I contend for in the present case. A woman may have inflammation of the skin, of the cellular tissue, of the mucous membrane, of the pleura, or of the peritoneum, and that inflammation may be ordinary healthy inflammation, the disposition of which is to limit itself by condensation of surrounding cellular tissue, and by its disposition to form pus in cellular textures, or in the serous tissues, by an effusion of sero-albuminous fluid with a tendency to adhesion; or it may be of an unhealthy inflammation of a diffuse character, with a disposition to spread and disorganize, according to the cause which produced it, or the state of constitution and

general health of the patient in whom the disease occurs. Dr. M. admits the cellular tissue may become the seat of erysipelas. Now, if this is so, then why may not the serous tissues, as the one is but a modification and condensation of the other? One thing certainly must be admitted, and that is this, that erysipelas is not a local, but a general disease, produced by a morbid state of the fluids, and that these diseased fluids may produce this peculiar form of puerperal inflammation when brought in contact with an absorbing surface of a female recently delivered. Very many cases of a reliable character are on record, where practitioners have communicated the disease to puerperal females, after dressing erysipelatous ulcers, when due attention has not been paid to cleanliness. Now is it not a general rule that, when vitiated animal fluids are capable of producing disease in a healthy person, I say is it not a fact that the disease produced is of a similar character to the one which produced it? Most certainly it is: there may be slight modifications, but the general characters of the disease remain the same. Variola never produces rubeola, nor syphilis variola; but like produces like. Now is it at all probable that the disease in question is an exception to this general rule? Is it to be supposed that inoculation of a puerperal patient with the morbid matter of erysipelas, should produce anything but erysipelas? Certainly not.

Again, it is a well-established and acknowledged fact that, when any malignant disease is prevailing epidemically in a certain portion of country, all the diseases of that district are more or less modified by and assimilated to the prevailing epidemic. Now, if this is so (and I trust there are very few who will deny it), what effect would an epidemic erysipelas be likely to produce on an inflammation of the peritoneum in a child-bed woman? Would it not so modify it as to produce an erysipelatous instead of an ordinary inflammation? This certainly cannot be denied. Thus it is that the same miasmatic state of atmosphere may produce erysipelas of the skin in one, of the cellular tissue in another, of the mucous membrane in another, of the pleura in another, and, most of all, would it be likely to produce metritis or peritonitis in a woman recently delivered, as her situation would be such as particularly to invite the disease to locate in that region. When erysipelas prevails in hospitals, wounded patients, from accidents or operations, are always sure to be attacked with it. Now a woman just delivered is in a similar condition to a wounded man, in more respects than one. She may have lost an undue quantity of blood, which renders the system peculiarly liable to this kind of disease; besides, that portion of the womb from which the placenta has been separated, is not in a very dissimilar condition from that of a wounded person from other causes. I do not pretend to say that it is exactly similar, but there certainly is something analogous in the two conditions. If the disease attacks the mucous membrane of the uterus, and spreads from thence to the peritoneum, it proves just as conclusively that the peritoneum is susceptible to this kind of disease as if it had originally commenced

there. All I want to prove is that the peritoneum may take on erysipelatous inflammation, of which fact I myself have not the least doubt. When this is once fairly established, the controversy in regard to the identity of the two diseases is at an end, and the point established that they are identically one and the same disease.

Again, if it can be proved that the mucous membrane of the uterus may be, and sometimes is, the seat of erysipelas (a fact which I believe is conceded by Dr. Meigs himself), then what objection in saying that a certain form of puerperal fever is identical with erysipelas?—yea, more, that it is erysipelas itself? In most of the cases which occurred here, the disease evidently commenced in the uterus, and sometimes confined its ravages entirely to that organ; in other cases, it evidently extended to the peritoneum in a gradual and progressive manner: its progress could be traced as easily up the peritoneum as it could be traced upon the external surface.

Another powerful reason for considering this affection as erysipelatous, is the fact that many of the children born of these women died within a few days with erysipelas of the scalp. Now if these females did not die with erysipelas, how happens it that so many of their children should happen to be attacked, whilst no other infant born at the same time suffered? To say the least of it, it is a remarkable coincidence.

*Remote Cause.*—The remote cause of this complaint was undoubtedly a vitiated, miasmatic state of atmosphere. What the peculiar poison contained in the atmosphere at this time was, no one can say with any degree of certainty. It was probably of such a character as to produce a defibrinating effect upon the blood to a certain degree, but its greatest influence was exerted upon the brain and nervous system, prostrating the vital energies and preventing healthy reaction.

*Predisposing Causes.*—There seemed to be but one predisposing cause, and that was a want of stamina in the constitution. It was confined almost exclusively to the anæmic; so much so was this the case, that I could generally predict with certainty who would be attacked and who would not. Not one healthy, red-faced woman was attacked. If my patient was florid in the face, and did not flood, I usually felt that she was secure; if, on the contrary, she was pale and weak, or flooded much, my apprehensions were always excited.

*Exciting Causes.*—These were the peculiar condition of the system induced by labour, exposure to cold, and the abuse of stimulating drinks, and, in some cases, excessive purgation.

*Prevention.*—There are only two modes of prevention; one is to give the patient, before parturition, such a hygienic and therapeutic course as to improve her general health to such a degree as to enable her to resist the poisonous influence of the disease. She should take regularly as much exercise in the open air as she can possibly bear without fatigue; her diet should consist principally of bread and lean meat, with oysters, eggs, &c., and with her meals she should take moderately of good, sound porter, or good wine;

her bowels should be moved, if costive, by enemata of moderately cool water, to which, if necessary, a little salt may be added. Purgatives should be sedulously avoided. The body should be sponged daily with water, not cold or warm, but of such a temperature as to feel slightly cool, after which it should be well rubbed with a coarse towel. In regard to medicines, I should place the most reliance upon some of the acidulated preparations of iron and cinchona; they should be used for at least two months, if possible, before delivery, and continued after delivery until the danger is past. The only sure preventive, however, is removal from the infected district; this I believe will never fail; every woman who went abroad to be confined did well.

To write out the history of the eleven cases in detail, would extend this communication too far; I shall therefore give a brief synopsis of the symptoms, treatment, peculiarities, terminations, &c., from which as correct deductions can be drawn as from a detail of each case separately. Of the eleven cases attacked, ten died; nine were attacked in just about forty-eight hours after delivery; two were attacked in twenty-four hours after delivery.

The disease commenced invariably with a chill, which was usually slight; there was pain in the head and back, and, in about half the cases, pain also in the bowels; but this was not constant, and, except in two cases, was slight. The most that they complained of was a sense of weariness; they were very tired, was the usual reply, I feel quite comfortable if I was not so tired. In the commencement, in every case, the uterus could be felt just above the pubis a little enlarged and tender, but this tenderness did not extend beyond the uterus. The belly was soft and flaccid; the milk was usually suppressed, but not always the lochia, but its character was changed to a dirty sanies. By degrees, in some cases, the bowels became gradually distended and resonant, but not to that degree that we observe in ordinary peritonitis; they were not hard and rigid, but had a soft and doughy feel; but in the majority of the cases the bowels were not distended during any part of the disease, but remained soft and flaccid to the last. Immediately after the chill, the pulse rose rapidly up to 160, which was its maximum; it was weak and easily compressed. The tongue was covered with a thin, white coat; the urine scanty and high coloured; skin cool, preternaturally moist and sticky; countenance leaden, look anxious; slight disposition to diarrhoea, so that purgatives operated quickly, powerfully, and, in most cases, injuriously prostrating the powers of the patient without at all relieving the disease. The intellect could hardly be said to be clear, although there was no delirium, except in the last stage of the disease; yet there was this peculiar hebetude of mind and peculiar indifference to their condition, which we often see in fatal disease of the bowels. In only two cases did the patients seem to be fully aware of their real condition; they did not generally consider themselves as very sick, or that there was danger of death; towards the close of the disease the mind usually wandered.

Two cases only terminated in gangrene; the rest died from the exhausting

effects of the disease, or the poison of the disease acting on the nervous system. In regard to treatment, various plans were adopted. The first cases which occurred, were treated with calomel and opium, fomentations and blisters to abdomen, with saline diaphoretics and mercurial inunctions, with a view, if possible, to produce a very gentle mercurialization; then, as the cases continued to prove fatal, other remedies were given either separately or conjointly, as spirits of turpentine, externally and internally, camphor, serpentaria, uitre, quinine, ammonia, &c. Toward the close of the epidemic, I bled three; the loss of blood was soon followed by symptoms of syncope, so that in neither case was there taken more than eight ounces of blood, and this was not repeated; the blood was buffy and cupped. I bled at the very onset of the disease, as soon as the chill was felt; one of these cases recovered, one lived about two weeks, and at one time her pulse fell to 110; she had had mercurial injection rubbed into the abdomen and thighs, and was slightly mercurialized. This produced, in my opinion, the mitigation of the symptoms as they occurred simultaneously, but a change for the worse soon took place and she died. In one case (the last case which occurred), the bleeding did not appear to have any effect. In the patient which recovered, in addition to the bleeding, I put her upon full doses of opium and digitalis, and blistered the abdomen; purgatives were invariably hurtful. Moving the bowels by injections, was productive of the most benefit. The time of death varied in different cases, from twenty-two hours to fourteen days; mean duration of the disease was about five days; those who were bled survived the longest.

Can this disease be communicated from one patient to another by the practitioner?

This is a very important question, a correct answer to which would be exceedingly desirable, as it affects seriously both practitioner and patient. That it can be conveyed from one patient to another, is probably correct, where due attention to cleanliness is not observed; but if ordinary attention be paid to person and clothes, I do not believe it will ever be thus propagated. In this epidemic, I am quite sure that it was not thus caused in a single instance; for had it been so caused, it would not have attacked one and then passed over five or six to attack another; but it should have attacked in succession, all the females where I attended, which was by no means the case. Only one out of five were sufferers from it. Moreover, in three or four of the cases, before attending them, I washed my whole person with soap and water, then with a solution of chloride of lime, and then with alcohol, changing every article of dress, and putting on clothes which were entirely clean. Yet, notwithstanding this precaution, they were attacked and died. I did this in the last case that occurred; I then was satisfied that the disease was not propagated by the hands or clothes of the physician; and I went from her dying bed and attended two ladies, without using any precaution, and they both escaped. My nephew in Bethel had three or four scattered cases; he took no precaution, but had no more cases.

The next question is, can the practitioner convey it in his own system, and communicate it by his breath, or by his cutaneous transpiration? This question I will not attempt to answer. I was constantly in the erysipelas from its beginning, was very much fatigued and worn down by constant riding and attendance on the sick, and in May, I had an attack of erysipelas of the face, which confined me for two weeks and over. Now about half of these cases occurred before I was taken with the disease and about half after I recovered and resumed my professional labours. Every case of this disease occurred in my practice; however, it must be borne in mind that, at the time of its commencement, I was doing nearly all of the obstetrical practice of the town, being the oldest and only married physician in the place.

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ART. IX.—*Case of Rupture of the Bladder, together with Seven Fractures of the Pelvis. Death on the forty-second day.* By E. R. PEASLEE, A. M., M. D., Professor of Surgery in Medical School of Maine.

WARREN COMINGS, of West Lebanon, N. H., a labourer and watchman at the terminus of the Northern Railroad, æt. 30, of bilious temperament, compact frame, but not athletic, regular habits, and uniformly good health since he had had the diseases incident to childhood, met with the following injury at 10 o'clock A. M. of Dec. 12th, 1849.

Having coupled together two freight cars, he stepped back between one of them and a platform into a space precisely seven and a half inches wide; and the train immediately starting, a projection on one of the cars caught the skirt of his coat, and turned him so as to present the transverse diameter of his pelvis across the space just mentioned. He was turned round three or four times before the train could be stopped, rising higher each time from his efforts to extricate himself.

On being released, he stood for a moment, then walked two or three steps, and was immediately removed to his house, a few rods distant. A free fecal discharge, and also one of urine, had been produced by the compression, though both the bowels and the bladder had been evacuated within one and a half hours before the accident. The patient was positive the urine did not pass through the urethra. A free hemorrhage (perhaps from the rectum) at once commenced.

At 11½ A. M., I found the patient calm, free from pain, except when moved, and pale, but not greatly prostrated, and somewhat cold. There had been no rigors; pulse 90, rather soft and intermitting. A contusion is found two inches above the right trochanter, and another just below the left; the former having been produced by the first contact of the car, the latter of the platform. A free venous hemorrhage still continued, proceeding from a lacerated wound in the perineum three quarters of an inch long, which extended back into the anus from a point one-eighth of an inch to the right of the raphé, and also divided the rectum and sphincter ani upwards for about three quarters of an inch. On removing a few shreds of areolar tissue, which were hanging from the wound, and introducing the finger into the latter, it followed a false passage, first to the right, and then forwards and upwards to